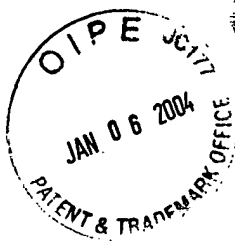


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APPLICATION  
FOR  
UNITED STATES  
LETTERS PATENT

Applicants: **Young-Ki KIM and Seung-Woo  
LEE**  
For: **LIQUID CRYSTAL DISPLAY**  
Docket No.: **6192.0318.US**



## LIQUID CRYSTAL DISPLAY

### BACKGROUND OF THE INVENTION

#### (a) Field of the Invention

5           The present invention relates to a liquid crystal display, and in particular, to a gate pulse width modulation method of a liquid crystal display.

#### (b) Description of Related Art

          A liquid crystal display (LCD) includes an upper panel including a common electrode and a plurality of color filters and coated with an alignment layer, a lower layer including a  
10   plurality of pixel electrodes and thin film transistors (TFTs) and coated with an alignment layer, and a liquid crystal (LC) layer filled in a gap between the upper panel and the lower panel. The LCD generates electric fields in the LC layer by applying respective voltages to the pixel electrodes and the common electrode. The orientations of the LC molecules in the LC layer, which determine polarization of light passing through the LC layer, vary depending on the field  
15   strength. A polarizer or a pair of a polarizer and an analyzer convert the light polarization into the transmittance of the light. Accordingly, the LCD displays desired images by controlling the voltages applied to the pixel electrodes and the common electrode.

          In circuitual view, the LCD includes a plurality of pixels arranged in a matrix and a plurality of signal lines connected to the pixels such as gate lines and data lines. Each pixel  
20   includes a LC capacitor including a pixel electrode, a common electrode, and a liquid crystal disposed between the pixel electrode and the common electrode, a switching element such as a TFT connected between the signal lines and the LC capacitor, and a storage capacitor connected to the switching element in parallel to the LC capacitor. The switching element selectively